

# Hantavirus infections

- Susceptible Species** Hantavirus infections can cause severe human disease. Furthermore, infections of non-human primates, domestic, pet and farmed animals have been described. Currently, little is known about possible clinical pictures in these dead-end hosts. Different rodent, insectivore and bat species act as reservoir species for hantaviruses.
- Distribution Area** Hantaviruses occur worldwide. The name of these viruses is derived from the Korean border river Hantan-gang where the prototype virus, Hantaanvirus, was detected. In Germany, hantaviruses have been known since the mid-1980s. Most human infections occur in mostly rural areas such as the Franconian Jura, the Swabian Alb, Lower Franconia, the Bavarian Forest, Odenwald, Upper Swabia, Eastern Hesse, Western Thuringia and in the area around Osnabrück. In addition, there are individual urban regions where hantavirus infections are observed. The frequency of infection varies from year to year and most likely depends on the local rodent population density and the virus prevalence in this population. For more information see: Web-basierte Abfrage der Meldedaten ([SurvStat of Robert Koch Institut](#))
- Causative Agent** The causative agents are enveloped, single-stranded RNA viruses. In Germany, at least three human pathogenic hantaviruses occur. Puumalavirus which causes the largest number of human hantavirus diseases in Germany is transmitted exclusively by bank voles. In the Northern and Eastern part of Germany, where the striped field mouse occurs, human infections with Dobrava-Belgrade-Virus, genotype Kurkino, also are observed. Little is known about the Tulavirus, which is transmitted by common voles. In Germany, two further hantavirus species occur whose pathogenicity for humans or other animals has not been assessed so far. In addition, hantaviruses have been described in some bat species in Africa and Asia.

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**Transmission** In addition to bank voles, striped field mice, and common voles, other related rodent species, such as the yellow-necked mouse or the field vole, also might be involved in transmission. The viruses remain stable in the environment for several weeks. Human infection occurs indirectly by inhaling dust contaminated with rodent excretions. In rare cases transmission may occur by a rodent bite. For hantaviruses present in Germany there are no indications of human-to-human transmission or transmission by pet animals or vectors such as ticks or mosquitos.

**Clinical Picture** Often this virus infection only causes mild or unspecific symptoms. Only rarely, more severe courses of disease are caused by hantavirus types occurring in Central Europe. The course of disease is flu-like, with high fever persisting for three to four days (more than 38 °C), headache, abdominal and back pain. In a subsequent stage of disease a drop in blood pressure and finally kidney dysfunction or even acute kidney failure may occur. Only rarely the clinical picture caused by hantavirus types occurring in Central Europe will include pulmonary disorders or clearly visible external bleeding.

**Diagnostics** Specific diagnostics consists of detection of antibodies against hantavirus. Genetic material of the virus is detectable in the blood only during the first one to three weeks of disease.

**Similar Clinical Pictures** The asymptomatic course of infection makes a clear diagnosis difficult. All flu-like diseases should be considered.

**Control** Since introduction of the Infection Protection Act in 2001 hantavirus diseases are notifiable in Germany. To reduce the risk of infection contact with rodents and their excretions should be avoided or a dust mask should be worn. In addition, measures should be taken to prevent an entry of rodents into living quarters and their closer vicinity. Protection measures should be taken in particular in the known endemic areas and at locations where rodents must be expected. For further information on prevention see: [Leaflet](#) (in German language)

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